

ABSTRACT

A porous reaction-bonded magnesia body with small or negligible shrinkage between the green state and the fired state. The body made by forming a green (i.e., unfired) body of mixed powders containing coarse grains of magnesia in combination with at least one reactive element, and optionally other ceramic oxides and/or compounds, followed by sintering in an oxidizing atmosphere. During sintering, oxidation and/or reaction of the element grain results in an overall volume change that is negligibly small or zero. The resulting body is highly porous, and may be used as a support for a semi-permeable membrane, especially relatively high coefficient of thermal expansion, high-temperature gas separation membranes.